



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,865	12/04/2001	Timothy M. Schaefer	51185-236984	8893

25764 7590 03/02/2004

FAEGRE & BENSON LLP
2200 WELLS FARGO CENTER
90 SOUTH 7TH STREET
MINNEAPOLIS, MN 55402

EXAMINER

GLENN, KIMBERLY E

ART UNIT PAPER NUMBER

2817

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,865

Applicant(s)

SCHAEFER, TIMOTHY M.

Examiner

Kimberly E Glenn

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/20/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-21, 24-27 and 29 is/are allowed.
- 6) ☒ Claim(s) 22 is/are rejected.
- 7) ☒ Claim(s) 23 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 2/10/04.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang US Patent 6,506,989 (of record) in view of Sakaguchi et al US Patent 5,990,615.

Wang disclose a MEMS switch comprising: a substrate 8 defining a plane; first and second switch contacts 12; contact shuttle 28 that is moveable in a linear path between the first and second switch state positions with respect to the switch contacts 12, spring biasing 4 the contact shuttle to the first switch state position. The spring includes: a relatively rigid member 52 connected to the contact shuttle 28; and at least one resilient member 4 connected to the relatively rigid member 52. The switch further includes and polymer insulator for electrically isolating the contact shuttle 28 and the driven member 52. (Figure 2 column 5 line 64 through column 6 line 42)

Thus, Wang is shown to teach all the limitations of the claim with the exception of the insulator being an oxide insulator.

Sakaguchi et al discloses an insulative protecting layer comprised of either a polymer or oxide insulative material. (Abstract, column 1 line 66-67, and column 2 lines 41-52)

Art Unit: 2817

One skilled in the art at the time of the invention would have found to obvious to replace the polymer insulator of Wang with the art recognized equivalent oxide insulator as taught by Sakaguchi et al. Examiner takes notice of the equivalence of the polymer insulator and the oxide insulator for their use in the insulation art and the selection of any of these known equivalents to provide a protective layer would be within the level or ordinary skill in the art.

Applicant's arguments filed 6/2/03 have been fully considered but they are not persuasive. The Wang reference teaches a switch comprising a switch contacts (12), a driven member (52) and a contact shuttle 28 connected to the driven member.

Allowable Subject Matter

Claims 23 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-21, 24-27 and 29 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: With regards to claims 1-13, 16-21 and 27, the prior art of record does not disclose or fairly teach a plurality of fixed electrodes, each located interleaved with and adjacent to one of the moving electrodes, having generally planar major surfaces perpendicular to the plane of the substrate, wherein in response to the application of an electric actuation voltage, electrostatic forces develop between the moving and fixed electrodes causing the moving electrodes to move along an axis parallel to the plane of

Art Unit: 2817

the substrate and perpendicular to the planar major surfaces of the electrodes, thereby forcing the contact shuttle to move to the second switch state position along the axis parallel to the plane of the substrate and perpendicular to the planar major surfaces of the electrodes. With regards to claims 14 and 15, the prior art of record does not disclose or fairly teach first and second side members connected to and extending between the first and second ends members on a first and second side of the rigid member. With regards to claim 23, the prior art of record does not disclose or fairly teach an isolation mount connecting the contact shuttle and the driven member, a retainer member fixedly connected to the either the contact shuttle or the driven member or and engaging member connected to either the contact shuttle or driven member but free form connection with the retainer member. With regards to claims 24-26 and 29, the prior art of record does not disclose or fairly teach a convex contact shuttle sized between and shaped to extend into the concave gap. With regards to claim 28, the prior art of record does not disclose or fairly teach the contact shuttle including a polysilicion base, a metal contact member on the base and a native oxide between the base and metal contact member.

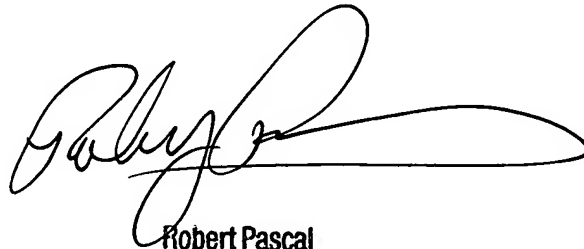
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly E Glenn
Examiner
Art Unit 2817

keg

A handwritten signature in black ink, appearing to read 'Robert Pascal', with a long horizontal flourish extending to the right.

Robert Pascal
Supervisory Patent Examiner
Technology Center 2800